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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,621	02/25/2004	David M. Reed	03008	2048
7590 Martha Ann Finnegan, Esq. Cabot Corporation 157 Concord Road Billerica, MA 01821-7001				
			EXAMINER	
			LIAO, DIANA J	
			ART UNIT	PAPER NUMBER
			1793	
			MAIL DATE	DELIVERY MODE
			04/14/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/786,621

Applicant(s)

REED ET AL.

Examiner

DIANA J. LIAO

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-40, 42-53 and 57-63 is/are pending in the application.
- 4a) Of the above claim(s) 23-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 40, 42-53, 57-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/18/2008 has been entered.

Claims 40, 42-53 and 57-63 are presented for examination. Claims 23-29 have been withdrawn. Claims 1-22, 41, and 54-56 have been cancelled by applicant.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 40, 42-53 and 57-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimmel, et al. (US 2001/0036056).

Kimmel '056 teaches a niobium oxide powder. (para. 17) The niobium oxide is oxygen reduced to a state that is not stoichiometric, such as NbO, NbO_{0.7}, NbO_{1.1}, and NbO₂, and more generically a ratio of Nb:O of 1:less than 2.5, which would also encompass NbO_{0.5}. The suboxide powder is to comprise any of those oxides or any combination thereof. (para. 28) In the process of making this powder, the getter material is preferably niobium metal, which then becomes part of the final product. (para. 38) The niobium suboxide final product is preferably a NbO, oxygen depleted NbO, or an aggregate or agglomerate which contains NbO and niobium metal. (para. 36) The niobium oxide powder can be flaked, angular or nodular. (para. 17) The preferred surface area of this oxide is 0.5-10.0 m²/g. (para. 30) The size of the powders are from 40-325 mesh (para. 18), which corresponds to 44μm to 420μm and overlaps the claimed range creating a *prima facie* case of obviousness. The oxygen reduced niobium may also contain levels of nitrogen. (para. 27) Kimmel '056 shows that the main components of its oxides are suboxides, as denoted by the components listed in the XRD Major phases. In addition, sample 18 has a metal phase, as well as a major and minor phase of different suboxides. Sample 13, as another example, has three suboxide components. (Table 1) Kimmel '056 lists other elements in a sample oxide created. The oxide appears to have 530 ppm to 710 ppm of other elements. (Table 3)

This corresponds to a 0.53-0.71% of impurities. Kimmel '056 also teaches a capacitor and capacitor anode comprising the valve metal suboxide. (para. 34-35)

Kimmel '056 is silent regarding phase purity, and does not specifically teach phase purities of 75%-99.95%. However, despite not making any mention of the purity of the phases, it would have been obvious or inherent to have a high phase purity. The existence of a "phase impurity" would appear to simply create its own phase and render all phases substantially pure. Alternatively if the phase purity is the amount of the phase which is actually the niobium or niobium oxide, Kimmel '056 makes no mention of impure phases, and in the sample niobium oxide analysis, non Nb or O elements add up to 530-710 ppm, leading to a Nb + O purity of 99.29-99.47%. Kimmel '056 appears to teach a general purity which meets the claimed ranges. One would be motivated to create a highly pure phase since impurities are generally not desired in the art. Kimmel '056 deals with electrical properties which would especially be impeded or affected by the presence of impurities. Kimmel '056 teaches that the getter material should be as pure as possible generally so as to not introduce impurities into the system of preferably at least 99%. (para. 19) Therefore, the claimed phase purities are not found patentable over the prior art.

Kimmel '056 is silent about the flow of the powder.

Regarding the flow of the powder, the flow is found to be inherent in the product given the similar particle size and surface area of the product in Kimmel '056. Flow is a

property which is generally governed by friction, which is affected by particle size and the roughness of the particles. Since the surface area and the particle size of Kimmel '056 and the claimed product overlap substantially there is reason to believe that the flow properties are also similar or the same.

Therefore, due to optimization, overlap of ranges and inherency, claims 40, 42-53 and 57-63 are not found patentable over the prior art.

Response to Arguments

5. Applicant's arguments filed 12/18/2008 have been fully considered but they are not persuasive.

Applicant argues that the flow rates of the powders disclosed in Kimmel '056 do not inherently possess the claimed flow values. Examiner notes the filed declaration under 37 C.F.R. 1.132, showing that the flow rates of the powders in Kimmel '056 are not within the claimed range of 300-1000 mg/s. However, as amended, the declaration is not commensurate in scope with the claims. The claims require that the flow be specifically measured by ASTM B 213, a standard for the flow rate of metal powders. The declaration would need to clearly show that the same standard was used for the flow measurements of the powder in Kimmel '056. The flow rates cited in the declaration reach values as high as 261 mg/s, which is close enough to 300 mg/s that different standards of measurement may make a difference. The value of "261" would have suggested to one of ordinary skill in the art a slightly higher value based upon a

reasonable expectation of success, In re O'Farrell, 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

Applicant argues that the process of making the powder create a flow which is patentable over the prior art. However, since these are product claims, and the properties of the product has not been found to be patentable over the prior art, the product by process limitations do not hold patentable weight.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIANA J. LIAO whose telephone number is (571)270-3592. The examiner can normally be reached on Monday - Friday 8:00am to 5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ngoc-Yen M. Nguyen/
Primary Examiner, Art Unit 1793

DJL